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ABSTRACT

This curriculum guide provides competencies and tasks for the position of clinical laboratory helper; it serves as both a career exploration experience and/or entry-level employment training. A list of 25 validated competencies and tasks covers careers from entry level to those that must be mastered to earn an associate degree in clinical laboratory technology. It is followed by a second competency list (21 competencies) and the corresponding curriculum for clinical laboratory helper. Employability Skills Charts then show a crosswalk between the charts and the curriculum guide. Numbers next to related basic skills, job skills, and responsibility skills are the competency or task numbers in the curriculum. Instructor guides provide information related to each specific task within the competency. The information includes competency/skill; task; performance objective and standard; student learning experiences; suggested instructional techniques; instructional equipment, materials, and supplies; and resources. The 21 competencies/skills relate to reading of physician orders for specimens, obtaining of blood specimens, aseptic technique, professional communication techniques, clinical laboratory terminology, specimen processing, safety, medical ethics, urinalysis, clerical duties, work relationships, analytical testing, quality control, inventory control, and laboratory data analysis. An annotated bibliography of resources is appended. (YLB)

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CLINICAL LABORATORY HELPER

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AUGUST 1986

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SEPTEMBER, 1986

FOREWORD

Validated competencies from the State of Arizona, Department of Vocational Education were developed in October, 1984 for careers in the clinical laboratory. These competencies cover careers from entry level to those which must be mastered to earn an associate degree in Clinical Laboratory Technology.

Some of these competencies and tasks may be repeated as the student progresses in his/her course of study on the clinical laboratory career ladder. This second study is in greater depth and covers a vider scope than the introductory exposure.

Competencies are not listed in an instructional sequence but are taken from the State Validated Competency List for the clinincal laboratory career ladder. This position has been designated CLINICAL LABORATORY HELPER and serves both as a career exploration experience and/or as an entry level employment training.

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INTRODUCTION AND VALIDATED COMPETENCIES

FOR CAREERS IN THE CLINICAL LABORATORY

INTRODUCTION:

The following is a list of validated competencies from the State of Arizona, Department of Vocational Education which were developed in October, 1984 for careers in the clinical laboratory. These competencies cover careers from entry level to those which must be mastered to earn an associate degree in clinical laboratory technology.

Some of these competencies and tasks may be repeated as the student progresses in his/her course of study on the clinical laboratory career ladder. This second study is in greater depth and covers a wider scope than the intoductory exposure.

Competencies are not listed in an instructional sequence but are taken from the State validated competency list for the clinical laboratory career ladder. Instructional sequence is left to the individual institution and instructor.

Following the validated competency list is a second competency list and the corresponding curriculum for an entry level position in the clinical laboratory career ladder. This position has been designated CLINICAL LABORATORY HELPER and serves both as a career exploration experience and/or as entry level employment training.

For clarification, the following terms are defined. A competency is identified with a whole number. Tasks are the knowledge or skills which are learned to master a competency. Tasks are identified in the list with a decimal number.

VALIDATED COMPETENCIES FOR CAREERS

IN THE CLINICAL LABORATORY

1. Manages task assignments as required by laboratory to procure specimens for laboratory analysis:

    1.1 Reads physician orders and laboratory requisitions and determines specimen requirements
    1.2 Sets priority designation of specimen collection
    1.3 Schedules time intervals for tolerance testing and timing for drug dependent tests

2. Obtains blood specimens ordered by physician to aid in the diagnosis and treatment of patients:

    2.1 Selects apparatus/container for blood specimen procurement
    2.2 Provides identification and labeling for routine and special samples
    2.3 Confirms patient identity
    2.4 Selects puncture site
    2.5 Performs capillary puncture
    2.6 Performs venipuncture
    2.7 Performs arterial puncture (depending on the institution's requirement)
    2.8 Performs sterile technique for blood culture collection
    2.9 Provides care of puncture site

3. Maintains aseptic technique to aid in the control of infection within the health care environment:

    3.1 Performs handwashing
    3.2 Disposes of contaminated materials and equipment
    3.3 Performs prescribed hospital techniques for nursery patients
    3.4 Uses protective gloves when designated
    3.5 Uses isolation technique when designated

4. Utilizes professional communication techniques to maintain rapport with clients and health team members:

    4.1 Provides information regarding special scheduling and communicates special situations to appropriate personnel
    4.2 Informs patient of special test requirements
    4.3 Receives and places telephone calls
    4.4 Recognizes levels of anxiety and coping in patients and self, and understands dynamics involved

5. Utilizes clinical laboratory terminology to communicate with health care team members:

    5.1 Demonstrates an understanding of prefixes, suffixes, roots and abbreviations commonly found in phlebotomy
    5.2 Demonstrates an understanding of basic anatomy terminology as it relates to phlebotomy

6. Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients:

   6.1 Prepares blood smears
   6.2 Identifies and delivers specimens with special time and temperature requirements
   6.3 Operates laboratory equipment for processing specimens
   6.4 Processes and delivers specimens to workstations
   6.5 Processes and prepares specimens for submission to reference laboratories

7. Utilizes general safety measures for the protection of personnel and patients in the clincal laboratory:

   7.1 Recognizes and understands biohazard symbols
   7.2 Follows established safety regulations and applies basic first aid in the clinical laboratory
   7.3 Cleans and maintains work areas

8. Utilizes human relations skills to support physical, emotional and intellectual needs of each patient:

   8.1 Maintains non-judgemental attitude toward patients
   8.2 Takes measures to assure optimal health of patients
   8.3 Applies principles of personal growth and development

9. Maintains medical ethics with other health professionals, the patient and the public:

   9.1 Identifies the responsibilities and career opportunities of the health care team within the health care setting
   9.2 Demonstrates concern and cooperation among health care professionals, the patient and the public
   9.3 Describes the accreditation, certification and professional organizations of the clinical laboratory team
   9.4 Describes the role of pathologist, clinical laboratory scientist, clinical laboratory technician, laboratory assistant and phlebotomist
   9.5 Maintains a professional image that includes dress and personal hygiene
   9.6 Understands the need for and practices strict confidentiality of all patient and medical information

10. Applies cardiopulmonary resuscitation techniques to persons in cardiac distress:

   10.1 Identifies cardipulmonary resuscitation needs
   10.2 Performs technique
   10.3 Refers to appropriate source for further care

11. Assists/Performs (depending on the institution's requirements) specified tests ordered by physician to aid in the diagnosis and treatment of patients:

   11.1 Performs bleeding and clotting time
   11.2 Performs urinalysis (excluding microscopic portion)

12. Performs clerical duties required by laboratory to ensure accurate and comprehensive records are maintained.

    12.1 Enters, modifies and verifies patient data and time notations regarding specimen collection either manually or into a computer
    12.2 Maintains written laboratory forms
    12.3 Maintains inventory of clerical and specimen collection supplies

13. Utilizes principles of work relationships, supervision and management to maximize working conditions with health care team members:

    13.1 Assumes accountability for personal work actions
    13.2 Recognizes lines of authority within the work setting
    13.3 Refers problems to supervisor

THE ABOVE COMPETENCIES, WHEN MASTERED, QUALIFY THE STUDENT FOR THE TITLE OF PHLEBOLOMIST/LABORATORY AIDE.

14. Uses biological specimens to perform routine analytical testing ordered by physician to aid in the diagnosis and treatment of patients.

    14.1 Performs basic preventive maintenance of equipment and instruments and refers to appropriate source for repairs
    14.2 Prepares reagents
    14.3 Prepares standards and controls
    14.4 Operates designated automated instrumentation
    14.5 Operates designated laboratory equipment required for testing
    14.6 Innoculates specimens for microbiological identification
    14.7 Prepares and stains smears
    14.8 Recognizes test results as consistent or inconsistent with usual pattern

15. Performs and monitors quality control of equipment, instrumentation, reagents and specimens to maintain accuracy and precision of laboratory results:

    15.1 Recognizes factors that affect laboratory procedures and results
    15.2 Checks instruments and corrects basic malfunctions according to preset protocol
    15.3 Utilizes quality control data of equipment and instruments
    15.4 Seeks direction in resolving technical problems

16. Maintains inventory control of laboratory supplies for use in the performance of analytical tests to aid in the diagnosis and treatment of patients:

    16.1 Receives and catalogs incoming supplies
    16.2 Organizes storage areas for supplies and reagents
    16.3 Participates in ordering of supplies according to institution's standard operating procedures

17. Communicates laboratory findings to the ordering physician to aid in the diagnosis and treatment of patients:

    17.1 Uses communication skills to convey laboratory findings to the ordering physician

18. Utilizes clinical labortory terminology to assist in communicating with health care team members:

    18.1 Demonstrates an understanding of prefixes, suffixes roots and abbreviations relating to clinical laboratory terminology

    18.2 Uses anatomy and physiology terminology

19. Applies basic scientific principles in learning laboratory techniques and procedures to maintain a state-of-the-art in clinical laboratory analysis:

    19.1 Participates in continuing education experiences relating to clinical laboratory sciences technology

20. Utilizes advanced safety measures for the protection of patients and personnel in the clincal laboratory:

    20.1 Understands hazards and can follow emergency procedures involving microbiological contamination
    20.2 Understands hazards and can follow emergency procedures involving radioactive materials

21. Utilizes basic mathematics and statistics to assist in analyzing and scrutinizing laboratory data:

    21.1 Converts weights and volumes to metric measurements
    21.2 Converts and uses temperatures in Fahrenheit, Kelvin and Celsius scales
    21.3 Uses addition, subtraction, multiplication, division, ratio/proportion and percentages to determine reagents solutions, standards and dilutions
    21.4 Calculates specific gravity, pH and ionic concentrations
    21.5 Calculates standard deviation and coefficient of variation for quality control
    21.6 Draws standard calibration curves

22. Enters laboratory test data into the computer:

    22.1 Enters verified test results into computer

THE ABOVE COMPETENCIES, WHEN MASTERED, QUALIFY THE STUDENT FOR THE TITLE OF CLINICAL LABORATORY ASSISTANT (CLINICAL LABORATORY TECHNICIAN-CERTIFICATE).

    22.2 Deletes data and cancels tests from computer
    22.3 Verifies data into computer
    22.4 Makes manual entry of data into computer

23. Utilizes biological specimens to select/prepare/perform laboratory procedures ordered by the physician to aid in the diagnosis and treatment of patients:

    23.1 Operates all laboratory equipment required for testing
    23.2 Identifies and classifies pathogenic microorganisms including bacteria, viruses, fungi and parasites
    23.3 Performs and interprets antibiotic and antimicrobial sensitivity testing
    23.4 Identifies morphological variations in red and white blood cells

23.5 Performs specialized laboratory testing when indicated, ie: antibody studies and serological titers
23.6 Performs urine microscopic examinations
23.7 Performs blood typing and blood compatibility testing procedures
23.8 Performs preventive and corrective maintenance of equipment and instruments or refers to appropriate source for repair

24. Analyzes, integrates and interprets data generated by the various clinical laboratory departments in making judgments regardng possible discrepancies:

24.1 Confirms abnormal results
24.2 Verifies quality control procedures
24.3 Correlates test results with patient's condition/diagnosis

25. Assesses/evaluates the results of quality assurance measures and institutes procedures to maintain accuracy and precision of laboratory analysis:

25.1 Assists in assaying specimens to evaluate new procedures
25.2 Identifies specific problems
25.3 Determines action to resolve discrepancies

THE ABOVE COMPETENCIES, WHEN MASTERED, COMPLETE THE MAJOR REQUIREMENTS FOR AN ASSOCIATE OF APPLIED SCIENCE IN CLINICAL LABORATORY TECHNOLOGY DEGREE, AND QUALIFY THE STUDENT FOR THE TITLE OF CLINICAL LABORATORY TECHNICIAN.

ADDITIONAL SOURCES OF INFORMATION FOR THE TEACHER

GENERAL REFERENCE BOOKS:

Bauer, John. CLINICAL LABORATORY METHODS, 9TH ED. C.V. Mosby Co. Publishers, St. Louis, MO. 1982.

Henry, John. CLINICAL DIAGNOSIS AND MANAGEMENT BY LABORATORY METHODS, 17TH ED. W.B. Saunders. 1984.

Both of these books are general references and could be added to the resource list for almost any of the competencies.

ADDRESSES:

American Society for Medical Technology
330 Meadowfern Drive
Houston, TX 77067
(713) 893-7072

American Society of Clinical Pathologists
2100 West Harrison Street
Chicago, IL 60612

National Certification Agency for Medical Laboratory Personnel
P.O Box 705
Ben Franklin Station
Washington, D. C. 20044

NOTES REGARDING PERSONNEL AND PROGRAM QUALIFICATIONS IN THE CLINICAL LABORATORY

Terms such as licensed, registered, certified, and accredited are often confused with relationship to the clinical laboratories and to the laboratory employees. A license refers to a piece of paper granted by a governmental agency (generally state) to those who pay a fee and meet certain requirements. Registered refers to having one's name on a list usually only upon payment of an annual fee and should not be confused with being certified by the Board of Registry of American Society of Clinical Pathologists. Certified means that the individual has passed a national examination that denotes a certain level of competency. The possession of certification, and the agency which has granted the certification is important for employment in a clinical laboratory. Accreditation refers to a program being approved after review of the curriculum, facilities, and qualifications of instructors. Accreditation recognized by the U.S. Office of Education is necessary for graduates to take a recognized certification examination.

All individuals who perform laboratory testing are not required to be certified. The Arizona Legislature has not enacted any laws to require licensing of individuals as some other states mandate. This allows many individuals with inadequate laboratory educational backgrounds to perform tests. Arizona law does license certain laboratories and stipulates the requirements of the Laboratory Director but not other employees. However, most Arizona licensed laboratories follow the provisions set forth by Medicare Regulations which must be followed to receive reimbursement for procedures performed on Medicare patients. The Medicare Regulations delineate the educational training of all employees actually doing the testing of specimens.

There are many professional titles and letters that are utilized by individuals in the clinical laboratory. This "alphabet soup" denotes differing levels of educational background and which agency granted the certification.

The job title may not indicate the educational level of employees. For example, Laboratory Assistants in some facilities perform specimens' test analyses while in other facilities they only procure specimens (only do phlebotomy).

To an observer, some laboratory procedures may appear simple to perform. However, a greater understanding of the test procedure and physiological factors is necesary to evaluate the test result to determine if it is a valid piece of data to provide to the physician. Thus, individuals must have some educational experiences in accredited laboratory programs in order to qualify to write the certification examinations.

There are two national phlebotomy certifications; one from the National Certification Agency for Clinical Laboratory Sciences (NCA), and one from the National Phlebotomy Association. There are two major technician level certifications; one from NCA and one from the American Society for Clinical Pathology (ASCP). There are three major technologist level certifications; one from NCA, one from ASCP, and one from the Health, Education and Welfare Department (HEW). HEW, now the Health and Human Services Department (HHS), wants an examination given to "grandfather" individuals who were working in the laboratory when Medicare Regulations were enacted and who did not have

the requisite formal education to meet NCA or ASCP certification. No additional testing dates are scheduled for this examination, so this route for certification is no longer available.

In Arizona, at the time of this writing, there are only a limited number of laboratory education programs that are recognized by the U.S. Office of Education. The only accredited phlebotomy program is a one semester (7 credit) course at Phoenix College. The Clinical Laboratory Technology program at the certificate level (2 semesters) and the Technician level (Associate Degree) is also at Phoenix College.

Arizona State University and the University of Arizona have accredited Technologist (BS Degree) programs.

VALIDATED COMPETENCIES FOR CLINICAL LABORATORY HELPER CURRICULUM

1. Manages task assignments as required by laboratory to procure specimens for laboratory analysis:

   1.1 Reads physician orders and laboratory requisitions and determines specimen requirements

2. Obtains blood specimens ordered by physician to aid in the diagnosis and treatment of patients:

   2.1 Selects apparatus/container for specimen procurement
   2.2 Provides identification and labeling for routine and special samples
   2.3 Confirms patient identity
   2.4 Selects puncture site
   2.5 Performs capillary puncture
   2.6 Performs venipuncture
   2.8 Performs sterile technique for blood culture collection
   2.9 Provides care of puncture site

3. Maintains aseptic technique to aid in the control of infection within the health care environment:

   3.1 Performs handwashing
   3.2 Disposes of contaminated materials and equipment
   3.4 Uses protective gloves when designated
   3.5 Uses isolation technique when designated

4. Utilizes professional communication techniques to maintain rapport with clients and health team members:

   4.3 Receives and places telephone calls
   4.4 Recognizes levels of anxiety and coping in patients and self, and understands dynamics involved

5. Utilizes clinical laboratory terminology to communicate with health care team members:

   5.1 Demonstrates an understanding of prefixes, suffixes, roots and abbreviations commonly found in phlebotomy
   5.2 Demonstrates an understanding of basic anatomy terminology as it relates to phlebotomy

6. Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients:

   6.1 Prepares blood smears
   6.2 Identifies and delivers specimens with special time and temperature requirements
   6.3 Operates laboratory equipment for processing specimens
   6.4 Processes and delivers specimens to workstations
   6.5 Processes and prepares specimens for submission to reference laboratories

7. Utilizes general safety measures for the protection of personnel and patients in the clinical laboratory:

   7.1 Recognizes and understands biohazard symbols
   7.2 Follows established safety regulations and applies basic first aid in the clinical laboratory
   7.3 Cleans and maintains work areas

9. Maintains medical ethics with other health professionals, the patient and the public:

   9.1 Identifies the responsibilities and career opportunities of the health care team within the health care setting
   9.2 Demonstrates concern and cooperation among health care professionals, the patient and the public
   9.3 Describes the accreditation, certification and professional organizations of the clinical laboratory team
   9.4 Describes the role of pathologist, clinical laboratory scientist, clinical laboratory technician, laboratory assistant and phlebotomist.
   9.5 Maintains a professional image that includes dress and personal hygiene
   9.6 Understands the need for and practices strict confidentiality of all patient and medical information

11. Assists/Performs (depending on the institution's requirements) specified tests ordered by physician to aid in the diagnosis and treatment of patients:

   11.2 Performs urinalysis (excluding microscopic portion)

12. Performs clerical duties required by laboratory to ensure accurate and comprehensive records are maintained:

   12.1 Enters, modifies and verifies patient data and time notations regarding specimen collection either manually or into a computer
   12.2 Maintains written laboratory forms
   12.3 Maintains inventory of clerical and specimen collection supplies

13. Utilizes principles of work relationships, supervision and management to maximize working conditions with health care team members:

   13.1 Assumes accountability for personal work actions
   13.2 Recognizes lines of authority within the work setting
   13.3 Refers problems to supervisor

14. Uses biological specimens to perform routine analytical testing ordered by physician to aid in the diagnosis and treatment of patients:

   14.2 Prepares reagents
   14.4 Operates designated automated instrumentation
   14.6 Innoculates specimens for microbiological identification
   14.7 Prepares and stains smears

15. Performs and monitors quality control of equipment, instrumentation, reagents and specimens to maintain accuracy and precision of laboratory results:

    15.3 Record basic quality control data of equipment and instruments (**Note:** for the purposes of this curriculum the task is to "Record basic" rather than "Utilize" quality control data..)

16. Maintains inventory control of laboratory supplies for use in the performance of analytical tests to aid in the diagnosis and treatment of patients:

    16.1 Receives and catalogs incoming supplies
    16.2 Organizes storage areas for supplies and reagents

21. Utilizes basic mathematics and statistics to assist in analyzing and scrutinizing laboratory data:

    21.3 Uses addition, subtraction, multiplication, division, ratio/ proportion and percentages to determine reagents and solutions (**Note:** for the purposes of this curriculum, the task omits the use of standards and dilutions.)

The Employability Skills Charts, which follow, are used to show a crosswalk between the charts and the curriculum guide. Numbers next to **RELATED BASIC SKILLS, JOB SKILLS and RESPONSIBILITY SKILLS** are the competency or task numbers in the curriculum. To determine which employability skill may be incorporated into teaching, compare the skill with the competency or task number shown.

Phlebotomist/Laboratory Aide

Related Basic Skills

MATHEMATICS

21.3 Uses addition and subtraction to calculate time intervals.

21.1 Converts weights and volumes into metric measurements.

SCIENCE

* Describes the systems, structures and functions of the body.

3.1 & 3.2 Uses the principles of cleanliness to prevent the spread of disease.

3.4 & 3.5 Identifies the more common infectious processes and modes of disease transmission.

Identifies the basic principles of nutrition and how diet maintains health and prevents disease.

COMMUNICATIVE ARTS

5.1 & 5.2 Uses correct medical terminology and abbreviations.

1.1 & 4.3 Communicates effectively both verbally and in writing, using correct grammar, spelling and punctuation.

1.1 Reads physician orders and laboratory requisitions.

13.1, 13.2, 13.3 Uses appropriate verbal and nonverbal communication with patients, co-workers and supervisors.

* Reads material related to the job.

* Found in the Phlebotomist/Laboratory Aide list but not Clinical Laboratory Helper

Phelbotomist/Laboratory Aide

Job Skills

*	Assists/performs specified bedside tests ordered by physicians.
2.3 & 6.3	Identifies patients and labels specimens.
2.5 & 2.6	Obtains blood specimens for the diagnosis and treatment of diseases.
6.3 & 6.4	Uses lab equipment as required to prepare, process and deliver specimens.
2.8	Utilizes sterile and aseptic techniques.
7.2	Provides basic emergency care. For example, cardiopulmonary resuscitation (CPR) and basic first aid.
12.2	Performs routine filing procedures.
12.3	Maintains inventory of clerical and specimen supplies.
12.1	Enters specimen collection data into a computer.
4.3	Uses effective telephone techniques.
*	Schedules time intervals for special testing procedures.
*	Instructs patients on how to collect specimens. For example: urine, stool and sputum.

* Found in Phlebotomist/Laboratory Aide list but not Clinical Laboratory Helper

Phlebotomist/Laboratory Aide

Responsibility Skills

9.5	Maintains good personal health and grooming; dresses appropriately.
7.1, 7.2, 7.3	Utilizes general safety measures for the protection of personnel and patients.
9.1 & 9.6	Maintains medical ethics with other health professionals, patients and the public.
*	Demonstrates respect for others' point of view.
13.1	Demonstrates punctuality, dependability and honesty.
4.4	Responds appropriately to behavior of people under stress.
	Follows oral and written directions carefully and correctly.
13.1	Assumes accountability for personal actions.
	Demonstrates self-confidence.
9.2	Demonstrates concern and cooperation among co-workers, supervisors and patients.
	Accepts constructive criticism from others.
9.4 & 13.2	Recognizes the roles of the clinical laboratory team members and maintains lines of authority within the work setting.

* Found in Phlebotomist/Laboratory Aide list but not Clinical Laboratory Helper

1.0 **COMPETENCY/SKILL:** Manages task assignments as required by laboratory to procure specimens for laboratory analysis.

1.1 **TASK:** Reads physician orders and laboratory requisitions, and determines specimen requirements.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given physician orders and/or laboratory requisitions,

EVALUATION: student will determine test(s) ordered and specimen requirement(s) for testing.

STANDARD: The student will be able to identify test(s) requested from marked requisitions and determine specimen requirement(s).

STUDENT LEARNING EXPERIENCES:

1. Memorize meaning of abbreviations used on requisitions for laboratory facility.
2. Determine which specimens are required for laboratory testing.
3. Practice reading/writing requisitions.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Have student compile a list of abbreviations used on facility requisitions with correct designation for test requested by each.

2. Demonstrate reading requisitions.

3. Demonstrate determining specimen requirements for testing.

4. Invite guest speaker from affiliate laboratory to give an overview of the clinical laboratory and specimens used.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Laboratory requisitions from a number of laboratories.
2. Laboratory requisitions marked with physician orders.
3. List of specimen requirements for testing.

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL, varied.

HEALTH OCCUPATION PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., 1981.

Keir, Lucille, et. al., MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Walters, Norma J., et. al., BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.1 **TASK:** Select apparatus/container for specimen procurement.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given laboratory requisitions marked with physician orders,

EVALUATION: identify the container for specimen procurement.

STANDARD: Students can identify containers for blood tests by color of rubber stopper on the container.

STUDENT LEARNING EXPERIENCES:

1. Read given laboratory requisition to determine test to be done.

2. Select appropriate container(s) for each blood test entered on requisition.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present demonstration of clotted blood (red stoppered tube) vs unclotted blood.

2. Prepare lab requisitions requiring various containers for a number of different speimens.

3. Direct students to select proper containers (guided practice).

4. Field trip to lab.

5. Invite phlebotomist to speak.

INSTRUCTIONAL EQUIPMENT, MATERIALS, AND SUPPLIES:

1. Laboratory requisitions marked with physician orders.
2. List of specimen requirements for each blood test.
3. Filmstrip and projector.

RESOURCES:

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., pp. 500-504, 1984.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 163-169, 1986.

Audiovisual aides from Prentice Hall Media, many selections.

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.2 **TASK:** Provides identification and labeling for routine and special samples.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given requisitions, corresponding samples and labels,

EVALUATION: identify and label all samples and requisitions.

STANDARD: Students must successfully match and label specimen and corresponding requisitions.

STUDENT LEARNING EXPERIENCES:

1. Obtain requisitions, labels, and facsimile blood samples from instructor.

2. Identify and label samples and requisitions.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Provide instruction and demonstration on correctly identifying and labeling specimens and requisitions.

2. Provide students with requisitions, facsimile samples and labels for guided practice.

3. Field trip to laboratory.

4. Laboratory technician as guest speaker.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Blank Labels
2. Sequential number stickers
3. Marked laboratory requisitions and fascimile samples
4. Filmstrip and projector.

RESOURCES:

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., pp. 500-504, 1984.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 16 and 169, 1986.

"Introduction to Specimen Collection," Prentice Hall Media. (filmstrip)

2.0 **COMPETENCY/SKILL:** Obtain blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.3 **TASK:** Confirms patient identity.

CONDITIONS: Given in-patients and out-patients in a simulated setting,

EVALUATION: accurately identify patients.

STANDARD: In-hospital patients will have an I. D. bracelet confirming identity. Out-patient identification is accomplished by facility guidelines: (ex: may have individual doctor's orders, may show driver's license).

STUDENT LEARNING EXPERIENCES:

1. Discuss the importance of properly identifying a patient.
2. List the circumstances which may involve patients without identification.
3. Properly identify a patient using facsimile requisitions and classmates wearing facsimile I. D. Bracelets.
4. Identify in-patients and out-patients.
5. Discuss the possible results of improper identification of a patient.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Show students I.D. bracelets, noting information contained on them.

2. Demonstrate the steps in identifying in-patients an out-patients.

3. Have students role play identifying in-patients and out-patients.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Facsimile in-patients with hospital I.D. bracelets
2. Facsimile out-patients with no hospital I.D. bracelets
3. Requisitions marked with test requested, patient name and I.D., and Dr.'s name

RESOURCES:

ANY NURSING FUNDAMENTALS TESTS HAVE INFORMATION ON PROPERLY IDENTIFYING PATIENTS.

FACILITY POLICY AND PROCEDURE MANUAL, varied.

Keir, Lucille, et.al. MEDICAL ASSISTING-CLINICAL AND ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Shea, Margaret A. and Sharron Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., 1984.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.4 **TASK:** Selects puncture site.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given blood draving (practice) arm, arms of classmates and a tourniquet,

EVALUATION: demonstrate selection of capillary puncture site and venipuncture site.

STANDARD: The venipuncture site is identified by feeling the vein, and capillary puncture site is determined by patient age and/or condition.

STUDENT LEARNING EXPERIENCES:

1. Practice palpating veins on training arm.
2. Practice applying tourniquet and locating suitable veins on classmates.
3. List criteria for selection of capillary puncture site.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss safety precautions related to selecting the puncture site and tourniquet use.
2. Demonstrate hov to select puncture site for venipuncture and capillary puncture.
3. Supervise guided practice between classmates.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Tourniquet
2. Blood draving arm
3. Arms of other students
4. Filmstrip and projector

RESOURCES:

Shea, Margaret, A. and Sharron M. Zakers. FUNDAMENTAL OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., pp. 508-509, 1984.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 161-173, 1986.

"Introduction to Blood Draving," Prentice Hall. (filmstrip)

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of disease.

2.5 **TASK:** Performs capillary puncture.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given equipment for performance of capillary puncture and patient or lab partner on whom to draw blood,

EVALUATION: obtains blood specimen by capillary puncture.

STANDARD: Capillary blood is obtained.

STUDENT LEARNING EXPERIENCES:

1. Select equipment.
2. List precautions to take when doing capillary puncture.
3. Perform capillary puncture on classmate(s) and/or patients.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate capillary puncture procedure.

2. Discuss safety precautions.

3. Supervise guided practice (be sure students have a release form signed by parent/guardian for blood drawing procedures.)

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Patient or lab partner on whom to draw blood
2. Cotton balls or gauze squares
3. Lancets
4. Band-aids
5. Rubbing alcohol or other antiseptic
6. Filmstrip and projector

RESOURCES:

Keir, Lucille, et.al. MEDICAL ASSISTING-CLINICAL AND ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., pp. 298-302 and 312-319, 1986.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., pp. 500-510, 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 182-183 and 225-227, 1983.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., p. 65-70, 1986.

"Drawing Blood, Capillary and Venipuncture," Prentice Hall. (filmstrip)

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.6 **TASK:** Performs venipuncture.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given equipment for performance of venipuncture and patient or lab partner on whom to draw blood,

EVALUATION: obtains blood specimen by venipuncture.

STANDARD: Venous blood is obtained.

STUDENT LEARNING EXPERIENCES:

1. Select equipment.
2. Identify and name to parts of blood collecting systems and syringes.
3. List precautions to take when draving blood and handling blood.
4. Practice on lab arm.
5. Perform venipuncture on classmates.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Demonstrate venipuncture procedure.

2. Discuss safety procedures including care of fainting patient.

3. Provide practice arm (can be obtained from Tainex, Healthco or number of other suppliers).

4. Supervise guided practice. (Be sure to have students have release forms signed by parent/guardians for blood draving procedures.)

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Patient or lab partner on whom to drav blood
2. Blood draving arm
3. Needles for vacuum tubes
4. Vacuum tubes for blood draving
5. Hypodermic needles
6. Cotton balls, gauze squares, and band-aids
7. Syringes
8. Tourniquet
9. Rubbing alcohol or other antiseptic
10. Filmstrip and projector

RESOURCES:

Keir, Lucille, et.al. MEDICAL ASSISTING-CLINICAL AND ADMINSTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., pp. 298-302 and 312-319, 1986.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., pp. 500-510, 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 225-227, 1983.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS WORKBOOK. Delmar Publishers, Inc., Albany, N.Y., pp. 182-183, 1983.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 65-70, 1986.

"Draving Blood, Capillary and Venipuncture," Prentice Hall. (filmstrip)

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.8 **TASK:** Performs sterile technique for blood collection.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given equipment to draw sterile blood sample,

EVALUATION: obtain sample from lab partner.

STANDARD: Incubate bottle at 37 C for 21 days and observe for signs of microorganism growth to assure sterility of sample.

STUDENT LEARNING EXPERIENCES:

1. Name parts of blood collection set.
2. Practice sterile preparation of venipuncture site.
3. Obtain sterile blood specimen from classmate in blood collection media container.
4. Incubate specimen at 37 C for 21 days at an affiliate lab.
5. Observe specimen for signs of microorganism growth.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Present equipment and review safety precautions. NOTE: Arrange for use of facilities at hospital or private laboratory for incubation of specimen.

2. Demonstrate sterile blood collection.

3. Supervise guided practice.

4. Invite speaker to discuss blood cultures.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Resource materials
2. Sterile gauze 4x4s
3. Antiseptic solution, iodine
4. Syringe, hypodermic needles
5. Sterile blood collection set
6. Blood culture media bottle
7. Hemostat

RESOURCES:

CLINICAL FALCILITIES AND LAB TECHNOLOGIST.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Publishers, St. Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 217-218, 1983.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., 1983.

2.0 **COMPETENCY/SKILL:** Obtains blood specimens ordered by physician to aid in diagnosis and treatment of patients.

2.9 **TASK:** Provides care of puncture site.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given cotton balls or gauze and band-aids in situations simulating venipuncture,

EVALUATION: student will demonstrate proper care of puncture site.

STANDARD: Proper care of puncture site will result in cessation of bleeding and minimizing of any hematoma development.

STUDENT LEARNING EXPERIENCES:

1. List precautions for care of venipuncture site.
2. Demonstrate proper care after successful venipuncture.
3. Demonstrate proper care after unsuccessful attempt at venipuncture.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss proper care of puncture site after either successful venipuncture or unsuccessful attempt at venipuncture.
2. Demonstrate on lab arm.
3. Supervise guided practice.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Lab partner
2. Cotton balls or gauze squares
3. Band-aids

RESOURCES:

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., pp. 500-510, 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATION TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 225-227, 1983.

Walters, Norma J., et.al. BASIC LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 65-90, 1986.

3.0 **COMPETENCY/SKILL:** Maintains aseptic technique to aid in the control of infection within the health care environment.

3.1 **TASK:** Performs handwashing.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given equipment for handwashing in simulated situations.

EVALUATION: Student will demonstrate proper handwashing technique and deliniate situations in which handwashing must be done.

STANDARD: Proper handwashing is needed to minimize iatrogenic infection.

STUDENT LEARNING EXPERIENCES:

1. Discuss situations when handwashing must be done.
2. Discuss asepsis.
3. Select proper water temperature for handwashing.
4. Wash hands using proper techniques.
5. Use nail brush correctly.
6. Rinse and dry hands carefully.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Provide information on handwashing.

2. Demonstrate handwashing technique.

3. Supervise students in guided practice.

4. Culture scrape specimens from several students before and after handwashing.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Sink
2. Soap and water
3. Nail brush
4. Towel

RESOURCES:

Caldwell, Esther and Barbara Hegner. HEALTH CARE ASSISTANT. Delmar Publishers, Inc., Albany, N.Y., 4th Ed., pp. 89-97, 1985.

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 6, Module B, 1981.

Schniedman, Rose and Susan Lambert. BEING A NURSING AIDE. Prentice-Hall, Inc., N.J., 4th Ed., 1986.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 56-57, 1983.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS WORKBOOK. Delmar Publishers, Inc., Albany, N.Y., pp. 41-42, 1983.

"Medical Asepsis," Prentice Hall. (filmstrip)

3.0 **COMPETENCY/SKILL:** Maintains aseptic technique to aid in the control of infection within the health care environment.

3.2 **TASK:** Disposes of contaminated materials and equipment.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given simulated situations involving both biological and/or radioactive contaminants.

EVALUATION: student will explain disposal techniques for each situation.

STANDARD: Disposal of contaminated material is mandated by law to protect our society from hazards.

STUDENT LEARNING EXPERIENCES:

1. Discuss types of materials which need "special handling".
2. Demonstrate disposal of radioactive materials using role-playing situations with simulated materials.
3. Demonstrate disposal of biologically contaminated materials using role playing situations with simulated materials.
4. Dispose of contaminated materials in the affiliate laboratory.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Provide lecture/discussion on contaminated materials including safety precautions.

2. Invite speaker from environmental control, nuclear medicine, nuclear regulatory commission or other appropriate agency.

3. Invite speaker from infection control team at clinical facility.

4. Have students role play disposal of contaminated wastes with simulated materials per affiliate laboratory guidelines.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Examples of contaminated materials such as blood and other specimens, microbiology media and cultures, radioactive waste, glass and plastic pipettes, test tubes, glassware and plasticware.

2. Affiliate laboratory procedures for disposal of contaminated materials and equipment.

RESOURCES:

Brunner, Lillian and Doris Suddarth. LIPPINCOTT MANUAL OF NURSING PRACTICE. J. B. Lippincott Co., Philadelphia, PA., 4th Ed., 1986.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co., St. Louis, MO., 1984.

Walters, Norma J. et. al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

3.0 **COMPETENCY/SKILL:** Maintains aseptic technique to aid in the control of infection within the health care environment.

3.4 **TASK:** Uses protective gloves when designated.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given case studies involving the use of protective gloves,

EVALUATION: student will delineate situations, both in the clinical laboratory and the health institution as a whole, which require the use of gloves.

STANDARD: Gloves are used to protect patients and/or personnel from hazards in the health care setting.

STUDENT LEARNING EXPERIENCES:

1. Given a number of simulated situations, decide when the situation would warrant the use of gloves.

2. Demonstrate proper technique for donning gloves.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Stimulate class discussion on use of gloves and demonstrate their use.

2. Present situations which may or may not require the use of gloves and have students determine which situation would require gloves.

3. Invite speaker to discuss infection control at clinical facility.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Examples of different types of protective gloves
2. Gloves for students to use in practice and demonstration

RESOURCES:

Caldwell, Esther and Barbara Hegner. HEALTH CARE ASSISTANT. Delmar Publishers, Inc., Albany, N.Y., 4th Ed., pp. 105-106, 1985.

Keir, Lucille, et.al. MEDICAL ASSISTING - CLINICAL AND ADMINISTRATIVE COMPETENIES. Delmar Publishers, Inc., Albany, N.Y., pp. 370-371, 1986.

Schniedman, Rose and Susan Lambert. BEING A NURSING AIDE. Prentice-Hall, Inc., Englewood Cliffs, N.J., 4th Ed., pp. 89-105, 1986.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 81-83 and 86-91, 1983.

3.0 **COMPETENCY/SKILL:** Maintains aseptic technique to aid in the control of infection within the health care environment.

3.5 **TASK:** Uses isolation technique when designated.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given simulated isolation settings,

EVALUATION: student will demonstrate isolation techniques for both quarantine or forward isolation and protective or reverse isolation.

STANDARD: Correct use of isolation techniques is required to protect personnel and/or patients from hazards in the health care setting.

STUDENT LEARNING EXPERIENCES:

1. Discuss conditions requiring use of isolation techniques.
2. Don and remove isolation garments including mask, gloves, govn, cap and booties.
3. Use double bagging techniques.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lecture/discussion covering isolation procedures including safety precautions.

2. Demonstrate isolation procedures.

3. Set up simulated isolation unit, have students don and remove isolation garments and perform double bagging procedures.

4. Invite epidemiologist from clinical facility to speak.

5. View filmstrips.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Isolation garments, (gown, cap, gloves and mask)
2. Sink, soap and towels
3. Shoe coverings
4. Bag for disposal of used items
5. Filmstrips and projector

RESOURCES:

Caldwell, Esther and Barbara Hegner. HEALTH CARE ASSISTANT. Delmar Publishers, Inc., Albany, N.Y., 4th Ed., pp. 102-109, 1985.

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 6, Module B, 1981.

Schniedman, Rose and Susan Lambert. BEING A NURSING AIDE. Prentice-Hall, Inc., Englewood Cliffs, N.J., 4th Ed., pp. 89-105, 1986.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS TEXT. Delmar Publishers, Inc., Albany, N.Y., pp. 86-91, 1983.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS WORKBOOK. Delmar Publishers, Inc., Albany, N.Y., pp. 63-67, 1983.

Wolff, LuVerne and Morlene Weitzel, Ruth Ann Zornov, Helen Zsohar. FUNDAMENTALS OF NURSING. J. B. Lippincott Co., Philadelphia, PA., 7th Ed., pp. 179-181 and 187-201, 1974.

"Body Against Self," "Diseases and Immunity," "Immune Response," "Isolation Procedures," Prentice Hall Media. (audio-visuals)

4.0 **COMPETENCY/SKILL:** Utilizes professional communication techniques to maintain rapport with clients and health team members.

4.3 **TASK:** Receives and places telephone calls.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given telephone situations,

EVALUATION: student will demonstrate the ability to communicate information in both in-coming and out-going calling situations.

STANDARD: Students will have very limited authority to transmit information via the telephone in the clinical laboratory.

STUDENT LEARNING EXPERIENCES:

1. Create sample out-going calls to demonstrate limits of student's authority re: out-going calls.

2. Create some sample in-coming calls that might be "difficult" and suggest an appropriate response (angry, appointment juggler, help beyond limits, unidentified, soliciting information, etc.).

3. Role play and analyze sample calls (incoming and outgoing).

4. Construct pamphlet or pocket-size guide for disposition of "difficult" calls with appropriate responses.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss ethical responsibilities in telephone techniques.

2. Role play common telephone courtesy and message construction for conversations in laboratory facilities.

3. Communications activities such as following verbal commands in arrangement of colored blocks.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Telephone simulation
2. Paper and writing materials
3. Telephone situations commonly encountered in the clinical laboratory.

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL. varied.

Keir, Lucille, et.al. MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co. Publishers, St.Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers Inc., Albany, N.Y., 1983.

4.0 **COMPETENCY/SKILL:** Utilizes professional communication techniques to maintain rapport with clients and health team members.

4.4 **TASK:** Recognizes levels of anxiety and coping in patients and self, and understands dynamics involved.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given case studies demonstrating stress related anxiety,

EVALUATION: student will recognize and react to anxiety.

STANDARD: Personal well-being and satisfaction are more certain if one is able to recognize and properly handle stress encountered on the job.

STUDENT LEARNING EXPERIENCES:

1. Evaluate personal coping strategies.
2. Identify and practice methods of stress reduction.
3. Role play and analyze situations involving stress related anxiety.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Guest Speaker: Stress Reduction.

2. Role-play situations of anxiety in laboratory setting.

3. Values activities designed to identify coping mechanisms and understanding of self.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Case studies of situations involving stress and/or anxiety
2. Role playing situations involving stress and/or anxiety

RESOURCES:

Caldwell, Esther and Barbara Hegner. HEALTH CARE ASSISTANT. Delmar Publishers, Inc., Albany, N.Y., 4th Ed., 1985.

HEALTH OCCUPATION PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 2, Module C, 1981.

HEALTH SERVICES ASSISTANT (1E-13-1). University of Missouri: Instructional Materials Lab.

Keir, Lucille, et.al. MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers Inc., Albany, N.Y., 1986.

OCCUPATIONAL SURVIVAL SKILLS. Oklahoma Department of Education.

OKLAHOMA STATE CURRICULUM. Oklahoma Department of Education.

Schniedman, Rose and Susan Lambert. BEING A NURSING AIDE. Prentice-Hall, Inc., Englevood Cliffs, N.J., 4th Ed., 1985.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C. V. Mosby Co. Publishers, St. Louis, MO., 1984.

5.0 **COMPETENCY/SKILL:** Utilizes clinical laboratory terminology to communicate with health care team members.

5.1 **TASK:** Demonstrates an understanding of prefixes, suffixes, roots and abbreviations commonly found in phlebotomy.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of prefixes, roots, suffixes and abbreviations used in phlebotomy, and a list of their meanings,

EVALUATION: the student will match each to its meaning.

STANDARD: Mastery is defined as 80% success.

STUDENT LEARNING EXPERIENCES:

1. Explain the difference between a prefix, suffix, root and abbreviation.

2. Define the meaning of various prefixes, suffixes, roots and abbreviations used in phlebotomy.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss the meaning of prefixes, suffixes, roots and abbreviations and their relation to phlebotomy.

2. Provide students with the meaning of selected prefixes, suffixes, roots and abbreviations used in phlebotomy.

3. Play a game using various prefixes, suffixes, roots and abbreviations used in phlebotomy (such as a "spelling bee" or "Jeopardy").

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of prefixes, suffixes, roots and abbreviations used in phlebotomy.

2. List of their meanings.

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 7, 1981.

TABER'S CYCLOPEDIC MEDICAL DICTIONARY. F. A. Davis Company, Philadelphia, PA., 1985.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 37-42, 1986.

5.0 **COMPETENCY/SKILL:** Utilizes clinical laboratory terminology to communicate with health care team members.

5.2 **TASK:** Demonstrates an understanding of basic anatomy and physiology terminology as it relates to phlebotomy.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of anatomy and physiology terms used in phlebotomy and a list of their meanings,

EVALUATION: the student will match each term to its meaning.

STANDARD: Mastery is defined as 80% success.

STUDENT LEARNING EXPERIENCES:

1. Correctly define the meaning of various anatomy and physiology terms used in phlebotomy in guided practice.

2. Correctly define the meaning of various anatomy and physiology terms used in phlebotomy in independent practice.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Select various anatomy and physiology terms relating to phlebotomy.

2. Practice learning the meaning of these terms with a game like a spelling bee (making the class into 2 teams).

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of anatomy and physiology terms used in phlebotomy
2. List of their meanings

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 4, 1981.

Memmler, R. L. and D. L. Wood. THE HUMAN BODY IN HEALTH AND DISEASE. J. B. Lippincott Co., Philadelphia, PA., 4th Ed., 1983.

6.0 **COMPETENCY/SKILL:** Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients.

6.1 **TASK:** Prepares blood smears.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given microscope slides and a blood specimen,

EVALUATION: student will prepare blood smears.

STANDARD: A correctly made blood smear has a fine feather edge and is smooth and even along its length.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions for handling blood specimens.
2. Complete objectives of venipuncture.
3. Complete objectives of capillary puncture.
4. Practice making blood smears using capillary and tube blood collections.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lecture/discussion on preparation of blood smear.

2. Demonstrate proper technique for making a blood smear.

3. Guest speaker.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Microscope slides
2. Blood sample(s) for making smears

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT. Student's Manual (H0201S). University of Texas, Austin, TX., 1981.

FACILITY PROCEDURE/POLICY MANUAL, varied.

Keir, Lucille, et.al. MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

LAB OCCUPATIONS CLUSTER: MEDICAL LAB ASSISTANT. Michigan State Curriculum.

MINNESOTA STATE CURRICULUM. State Department of Education, Minneapolis, MN.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C.V. Mosby Co. Publishers, St. Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers Inc., Albany, N.Y., 1983.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers Inc., Albany, N.Y., 1986.

6.0 **COMPETENCY/SKILL:** Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients.

6.2 **TASK:** Identifies and delivers specimens with special time and temperature requirements.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of test names and a list of special time and temperature requirements,

EVALUATION: student will match test to special requirements.

STANDARD: Mastery is defined as 90% success.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions for specimen handling.
2. Compile chart of tests which have special time and temperature requirements done in the affiliate laboratory.
3. List the special time and temperature requirements of these tests.
4. List area of laboratory or reference laboratory which uses these specimens.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discussion/lecture on testing that has special time and temperature requirements.

2. Lead discussion re: effect on test results of improper handling of specimen and corresponding possible consequences to the patient. (Lead by a guest speaker from the affiliate laboratory.)

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of tests with special time and temperature requirements
2. Delivery destination for these specimens

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT. Student's Manual (H0201S). University of Texas, Austin, TX., 1981.

FACILITY PROCEDURE/POLICY MANUAL, varied.

FEDERAL AND STATE LABOR LAWS (Courier Restrictions).

LAB OCCUPATIONS CLUSTER: MEDICAL LABORATORY ASSISTANT. Michigan State Curriculum.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C.V. Mosby Co. Publishers, St. Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., 1983.

Slockbover, Jean M. and Thomas A. Blumenfeld. COLLECTION AND HANDLING OF LABORATORY SPECIMENS. J. B. Lippincott Co., Philadelphia, PA., 1983.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

6.0 **COMPETENCY/SKILL:** Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients.

6.3 **TASK:** Operates laboratory equipment for processing specimens.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given equipment for processing specimens in the clinical laboratory,

EVALUATION: the student,will demonstrate its use.

STANDARD: The operation of expensive equipment in the clinical laboratory carries the responsibility to learn correct operational procedures to minimize the chances of damaging the equipment and/or ruining specimens.

STUDENT LEARNING EXPERIENCES:

1. Reviev safety precautions for centrifuging - particulary relating to aerosol formation.

2. Practice centrifuge techniques.

3. Complete objectives for venipuncture.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lecture/discussion of entrifuge uses and techniques.

2. Demonstrate centrifuge techniques and removal of serum.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Blood specimens to centrifuge*
2. Table-top centrifuge and information about floor model centrifuges
3. Vacuum tubes for blood draving filled with various levels of vater

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL, varied.

Keir, Lucille, et.al. MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C.V. Mosby Co. Publishers, St. Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., 1983.

Slockbover, Jean M. and Thomas A. Blumenfeld. COLLECTION AND HANDLING OF LABORATORY SPECIMENS. J. B. Lippincott Co., Philadelphia, PA., 1983.

Walters, Norma J., et. al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Williams, Catherine. MEDICAL LABORATORY SERVICES. University of Texas, Austin, TX., 1981.

*Some can be facsimile specimens of rubber stopper 'clot' and water to provide a larger number of 'specimens'.

6.0 **COMPETENCY/SKILL:** Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients.

6.4 **TASK:** Processes and delivers specimens to work station.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given specimens for processing and equipment needed,

EVALUATION: student will process specimens (including removal of serum or plasma to storage or testing container) and deliver specimens to the work stations.

STANDARD: Any time specimen identity is being confirmed, mastery must be at 100%. There is no room for error.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions.
2. Practice processing specimens (to include correct labeling of serum or plasma removed to storage of testing containers.
3. Construct list of tests done at each station of lab.
4. Practice delivery of sample specimens according to facility guidelines.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss consequences of mislabeling processed specimens.
2. Simulate specimen processing and labeling according to procedure used in affiliate lab. (Guest speaker from lab.)
3. Lecture/discussion on stations of lab and specimens processed for each.
4. Simulate specimen delivery to work stations.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of tests done at the affiliate lab
2. List of specimen requirements for each test
3. Affiliate lab procedure for processing specimens

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL, varied.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers Inc., Albany, N.Y., 1983.

Walters, Norma J., et. al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

6.0 **COMPETENCY/SKILL:** Processes specimens for clinical laboratory analysis to aid in diagnosis and treatment of patients.

6.5 **TASK:** Processes and prepares specimens for mailing to reference laboratories.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of reference labs used by the affiliate laboratory and a list of tests (and their specimen requirements) sent to each,

EVALUATION: student will demonstrate specimen processing and shipment for a random list of tests.

STANDARD: Reference testing is frequently expensive and critical to diagnosis. Incorrect processing and/or shipment of specimens can be costly and injurious to the patient.

STUDENT LEARNING EXPERIENCES:

1. Complete objectives for specimen processing.

2. Practice processing and preparing specimens for shipping to reference laboratories.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lecture/demonstration of specimen processing and shipping by a guest speaker from the affiliate lab.

2. Simulate processing and shipping specimens.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of reference laboratories used by affiliate lab, and tests sent to each
2. List of specimen requirements and proper shipping procedures for tests sent to each reference laboratory

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL. varied.

Slockbover, Jean M. and Thomas A. Blumenfeld. COLLECTION AND HANDLING OF LABORATORY SPECIMENS. J. B. Lippincott Co., Philadelphia, PA., 1983.

7.0 **COMPETENCY/SKILL:** Utilizes general safety measures for the protection of personnel and patients in the clinical laboratory.

7.1 **TASK:** Recognizes and understands biohazard symbols.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given biohazard symbols,

EVALUATION: student will identify each and list the hazards of which each warns.

STANDARD: Biohazard symbols warn of potentially dangerous situations and alert personnel to take proper cautions.

STUDENT LEARNING EXPERIENCES:

1. Student will draw facsimile biohazard symbols.
2. Compile a list of locations in lab where biohazards are used.
3. Use coffee cans and colored paper to "create" biohazard containers and demonstrate their use.
4. Prepare a list of biohazards used in student's affiliate laboratory listing procedures for handling each.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Guest speaker: Biohazards.
2. Lead group discussion: Biohazards used in the clinical lab.
3. Compile article review on current issues in this area.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Radiation symbol
2. Poison symbol
3. Any other biohazard symbols used in the students' affiliate laboratories.

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL, varied.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y. 1986.

Williams, Catherine. MEDICAL LABORATORY SERVICES. University of Texas, Austin, TX., 1981.

7.0 **COMPETENCY/SKILL:** Utilizes general safety measures for the protection of personnel and patients in the clinical laboratory.

7.2 **TASK:** Follows established safety regulations and applies basic first aid in the clinical laboratory.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a multiple choice exam on laboratory safety and first aid,

EVALUATION: student will demonstrate mastery by achieving a minimum score of 85%.

STANDARD: Basic safety and first aid should be of vital importance to all clinical laboratory personnel due to the many potential dangers inherent in the nature of the work performed.

STUDENT LEARNING EXPERIENCES:

1. Prepare a poster or bulletin board display illustrating a safety regulation.

2. Role play and analyze application of first aid in emergency situations.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lecture/demonstration of first aid procedures.

2. Guest speaker from affiliate lab to speak on lab safety regulations.

3. Simulate first aid situations.

4. Lecture/discussion of hazards posed by acids, bases, organic solvents, flammables and combustibles.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of laboratory safety regulations
2. List of basic first aid procedures
3. List of common acids, bases, organic solvents, flammables and combustibles

RESOURCES:

FACILITY PROCEDURE/POLICY MANUAL.

Ferris and Fong. MICROBIOLOGY FOR HEALTH CAREERS. Delmar Publishers, Inc., Albany, N.Y., 2nd Ed., 1982.

Keir, Lucille, et. al. MEDICAL ASSISTING: CLINICAL ADMINSTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

HEALTH SERVICES ASSISTANT (1E-13-1). University of Missouri, Instructional Materials Lab.

MINNESOTA STATE CURRICULUM. State Department of Education, Minneapolis, MN.

OKLAHOMA STATE CURRICULUM. Oklahoma Department of Education.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C.V. Mosby Co. Publishers, St. Louis, MO., 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., 1983.

Walters, Norma J., et. al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

7.0 **COMPETENCY/SKILL:** Utilizes general safety measures for the protection of personnel and patients in the clinical laboratory.

7.3 **TASK:** Cleans and maintains work areas.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given simulation settings of work areas in the laboratory,

EVALUATION: demonstrates/explains correct procedure for cleaning and maintaining them.

STANDARD: Cleaned and maintained work areas are essential for the efficient and safe operation of the clinical laboratory.

STUDENT LEARNING EXPERIENCES:

1. Develop a chart of special requirments for cleaning and maintaining work stations in various areas of the lab.

2. Simulate cleaning and maintaining work areas.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discussion/lecture on theory and technique of cleaning and maintaining work areas.

2. Demonstrate cleaning and maintaining work areas in the affiliate laboratory.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Copies of laboratory procedure manuals describing procedures for cleaning and maintaining work areas.
2. List of cleaning agents used in the clinical laboratory and the special function of each.

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT. Student's Manual (H02018). University of Texas, Austin, TX., 1981.

FACILITY PROCEDURE/POLICY MANUAL, varied.

Keir, Lucille, et.al. MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

LAB OCCUPATIONS CLUSTER: MEDICAL LABORATORY ASSISTANT. Michigan State Curriculum.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., 1983.

Walters, Norma J., et. al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Williams, Catherine. MEDICAL LABORATORY SERVICES. University of Texas, Austin, TX., 1981.

9.0 **COMPETENCY/SKILL:** Maintains medical ethics with other health professionals, the patient and public.

9.1 **TASK:** Identifies the responsibilities and career opportunities of the health care team within the health care setting.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of hospital departments,

EVAULATION: identify the health care teams within the department.

STANDARD: The student will list roles of and career opportunities in major hospital departments. (To include: Nursing, Physical Therapy, Occupational Therapy, Dietetics, X-ray, Nuclear Medicine, Housekeeping, Central Supply, Respiratory Therapy and any others deemed appropriate by the instructor.)

STUDENT LEARNING EXPERIENCES:

1. Complete Health Occupations Program (HOP) Curriculum Unit 1, Module C.

2. Visit a different patient care department in the health care setting and present an oral report to the class.

3. Complete a career research project and present to class.

4. Explore a chosen health career.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lead students in brainstorming for prior knowledge.

2. Review list of hospital departments with students.

3. Assign a group of students to develop a bulletin board display focusing on careers in health facilities, using available career pamphlets, brochures, illustrations, clippings.

4. Invite representative from several health area to speak to the class regarding careers in their areas.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of hospital departments with a brief description of each
2. Name of person heading each area in the student's affiliate institution

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 1, Module C.

Badasch, Shirley. THE HEALTH CARE WORKER. Brady Communications Co., Inc., Bowie, MD., pp. 20-53, 1985.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norvalk, CT., pp. 1-6, 1984.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., pp. 7-11, 1983.

9.0 **COMPETENCY/SKILL:** Maintains medical ethics with other health professionals, the patient and the public.

9.2 **TASK:** Demonstrates concern and cooperation among health care professionals, the patient and the public.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given three case studies dealing with medical ethics,

EVALUATION: student will identify breaches in ethical behavior in each.

STANDARD: All health care workers should demonstrate concern and cooperation among those persons encountered in the health care environment and set limits on words and deeds to not knowingly do harm.

STUDENT LEARNING EXPERIENCES:

1. Complete HOP unit 2, Module C.
2. Define ethics, both moral and legal aspects.
3. Discuss the code of ethics and unethical behavior.
4. Differentiate between illegal and unethical acts.
5. Identify ethical practices for health care workers.
6. Develop a code of ethics that would apply to the clinical lab worker.
7. Analyze role-playing situations and identify the proper ethical behavior.
8. Demonstrate professional conduct to maintain successful employment relationships.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Define conduct expected of health care workers through small groups developing lists of standards.

2. Discuss the practical reasons for conduct.

3. Assign students to develop a personal code of ethics relating to the task.

4. Assign students to bring in illustrations, cartoons, articles, etc. relating to ethics.

5. Prepare role playing situations relating to ethics.

6. Lead a class discussion focusing on thical and unethical behavior and hov to remedy undesirable situations by applying ethical standards.

7. Prepare situations for small group discussions to solve and share with the class for discussion.

8. Invite a representative from a health care facility personnel office to speak to the class to discuss conduct and consequences of unprofessional conduct.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Role-play situations dealing with medical ethics
2. Case studies dealing with medical ethics

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 2, Module C, 1981.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., pp. 204-205, 1984.

Pendergraph, Garland E. HANDBOOK OF PHLEBOTOMY. Lea and Febiger, Philadelphia, PA., pp. 8-9, 1984.

9.0 **COMPETENCY/SKILL:** Maintains medical ethics with other health professionals, the patient and public.

9.3 **TASK:** Describes the accreditation, certification and professional organizations of the clinical laboratory team.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given information learned about accreditation, certification and professional organizations,

EVALUATION: student will pass a test matching words, initials and names to meanings and definitions.

STANDARD: Mastery is defined as 80% correct answers.

STUDENT LEARNING EXPERIENCES:

1. Differentiate between licensure, registration, accreditation and certification.

2. List professional organizations for laboratory personnel.

3. Discuss the difference in benefits for each organization (panel discussion).

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Assign students to write to professional organizations for information.

2. Invite a representative from the clinical laboratory team to speak to the class on licensure, accreditation and professional organizations.

3. Assign a group of students to bring in illustrations/information and to prepare a bulletin board display relating to professional organizations.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of steps on the clinical laboratory career ladder.
2. List of certification requirements, accreditation agencies and professional organizations for each step on the clinical laboratory career ladder.

RESOURCES:

Badasch, Shirley. THE HEALTH CARE WORKER. Brady Communications Co., Inc., Bowie, MD., p. 12, 1985.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., pp. 205-207, 1984.

9.0 **COMPETENCY/SKILL:** Maintains medical ethics with other health professionals, the patient and the public.

9.4 **TASK:** Describes the role of pathologist, clinical laboratory scientist, clinical laboratory technician, laboratory assistant and phlebotomist.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given various duties performed in the clinical laboratory,

EVALUATION: the student will identify all the personnel catagories which are qualified to perform that duty.

STANDARD: Mastery is defined as 80% success.

STUDENT LEARNING EXPERIENCES:

1. Read job descriptions for all levels of laboratory employees and list synonymous titles for steps in the clinical laboratory career ladder.

2. Discuss duties, educational requirements, etc. for the different levels of laboratory personnel.

3. Present a report on a laboratory career and where to obtain training.

4. List schools in Arizona which offer accredited training programs for each step on the clinical laboratory career ladder.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Assign students to small groups to researchone job title in the laboratory and prepare an oral presentation for the class.

2. Invite a representative from a clinical laboratory to speak on the varous job titles in the laboratory.

3. Arrange for each student to spend one day shadowing a pathologist or a technologist in a laboratory.

4. Assign students to research colleges/universities to learn where programs are offered.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of synonymous titles for positions in the clinical laboratory.
2. Job descriptions for pathologist, clinical laboratory scientist, clinical laboratory technician, laboratory assistant and phlebotomist from as many institutions as possible.

RESOURCES:

Badasch, Shirley. THE HEALTH CARE WORKER. Brady Communications Co., Inc., Bowie, MD., pp. 38-41, 1985.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norvalk, CT., pp. 8-11, 1984.

Nassif, Janet Zhun. HANDBOOK OF HEALTH CAREERS. Human Sciences Press, New York, N.Y., pp. 106-114, 1980.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 4 and 8-9, 1986.

9.0 **COMPETENCY/SKILL:** Maintains medical ethics with other health professionals, the patient and the public.

9.5 **TASK:** Maintains a professional image that includes dress and personal hygiene.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given an affiliate lab in which the student spends time,

EVALUATION: student will demonstrate a professional image.

STANDARD: Student will adopt the policies of the affiliate laboratory concerning "professional image" to the satisfaction of the student's laboratory supervisor.

STUDENT LEARNING EXPERIENCES:

1. Read dress and grooming codes from clinical agencies and discuss in class.
2. Critique illustrations/cartoons of health care workers in various types of dress or uniforms.
3. Analyze role-playing situations and identify the proper dress/grooming.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss/demonstrate good grooming, personal hygiene and proper dress for health care workers.
2. Assign students to bring in illustrations/cartoons of health care workers in various types of dress or uniforms.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Dress and grooming codes from as many laboratories as possible
2. Role playing situations relating to professional image

RESOURCES:

Badasch, Shirley. THE HEALTH CARE WORKER. Brady Communications Co., Inc., Bowie, MD., pp. 9-10, 1985.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., pp. 207-208, 1984.

Pendergraph, Garland E. HANDBOOK OF PHLEBOTOMY. Lea and Febiger, Philadelphia, PA., pp. 9-10, 1984.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., p. 10, 1986.

9.0 **COMPETENCY/SKILL:** Maintains medical ethics with other health professionals, the patient and the public.

9.6 **TASK:** Understands the need for and practices strict confidentiality of all patient and medical information.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given three case studies regarding confidentiality in the health care environment,

EVALUATION: student will correctly analyze each case in writing.

STANDARD: Practicing confidentiality of all information seen in the health care environment is of paramount importance in the practice of medical ethics to protect the privacy of patients.

STUDENT LEARNING EXPERIENCES:

1. Discuss examples of ethical and unethical behavior seen in the clinical facility concerning confidentiality.
2. Group discussion about possible consequences of breach of confidentiality.
3. Discuss case studies concerning confidentiality.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lecture/discussion on medical ethics and confidentiality.
2. Guest lecturer (either from law or medicine) to discuss recent development trends.
3. Modeling of ethical behavior by instructor.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Case studies in confidentiality of information
2. Copy of "Code of Ethics" from student's affiliate institutions, if available

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 2, Module D, 1981.

Badasch, Shirley. THE HEALTH CARE WORKER. Brady Communications Co., Inc., Bowie, MD., 1985.

Garza, Diane and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., 1984.

11.0 **COMPETENCY/SKILL:** Assist/Perform (depending on the institution's requirements) specified tests ordered by physician to aid in the diagnosis and treatment of patients.

11.2 **TASK:** Performs urinalysis (excluding microscopic portion).

PERFORMANCE OBJECTIVE:

CONDITIONS: Given urine samples, worksheets and requisite equipment and reagents,

EVALUATION: student will perform urinalysis (excluding microscopic portion) and record results.

STANDARD: Performing tests and patient samples and recording results of testing must be done with 100% accuracy.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions.
2. List the physical tests performed in a routine urinalysis.
3. List the chemical tests performed in a routine urinalysis.
4. Practice performing the physical tests of a routine urinalysis.
5. Using a reagent test strip and any other reagent and equipment, perform the chemical tests of a routine urinalysis.
6. Practice properly recording test results according to the procedure used in the affiliate laboratory.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss safety aspects of handling urine specimens.

2. Discuss methods of urine specimen collection and proper labeling of specimens.

3. Discuss quality control procedures for urinalysis.

4. Following a demonstration, have students perform a routine urinalysis (excluding microscopic portion).

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Urine Samples
2. Centrifuge
3. Urinalysis dipstix from Ames and other manufacturers
4. Refractometer
5. Reagents for confirmatory testing as per affiliate laboratory procedures
6. Worksheet for recording results

RESOURCES:

URINALYSIS SECTION OF PROCEDURE MANUAL FROM AFFILIATE LAB.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 283-296, 1986.

12.0 **COMPETENCY/SKILL:** Performs clerical duties required by the laboratory to ensure accurate and comprehensive records are maintained.

12.1 **TASK:** Enters, modifies and verifies patient data and time notations regarding specimen collections manually or into the computer.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given facsimile patient data,

EVALUATION: student will demonstrate entry of data manually and electronically onto laboratory records.

STANDARD: Patient data must be handled with extreme care and error free entry is essential.

STUDENT LEARNING EXPERIENCES:

1. Write an essay explaining patient data entry, modification and verification in the affiliate laboratory.
2. Simulate entry of data into the computer.
3. Simulate entry of data onto a manual worksheet or log.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Obtain copies or prepare facsimile of manual worksheets, other records, and logs and demonstrate their use.
2. Prepare simulations of patient data for students to enter into the computer and to log.
3. Arrange a field trip to a laboratory for demonstration of patient data handling.
4. Assign students to work with patient data in a laboratory under the direction of the laboratory personnel.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Laboratory requisitions marked with patient data and test requested
2. Typewriter or computer terminal for data entry and manual worksheet or log

RESOURCES:

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., pp. 166-171, 1984.

Barnett, Sara. MEDICAL LABORATORY ASSISTANT, Student's Manual (HO2018). The University of Texas, Austin, TX., p. 3, 1981.

Williams, Catherine. MEDICAL LABORATORY SERVICES. The University of Texas, Austin, TX., p. 6, 1981.

12.0 **COMPETENCY/SKILL:** Performs clerical duties required by the laboratory to ensure accurate and comprehensive records are maintained.

12.2 **TASK:** Maintains written laboratory forms.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given written laboratory records either in a simulation setting or in the affiliate laboratory,

EVALUATION: student will demonstrate maintenance of written laboratory forms.

STANDARD: Accurate files allow for the efficient and timely retrieval of written laboratory records.

STUDENT LEARNING EXPERIENCES:

1. Study completed laboratory requisitions.
2. Complete blank laboratory requisitions.
3. File and retrieve laboratory results either in a simulation setting or in the affiliate laboratory.
4. Maintain files of laboratory records and reports either in a simulation setting or in the affiliate laboratory.
5. Present a report to class on procedure used in the student's affiliate laboratory.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss importance of laboratory records.

2. Prepare simulations of orders/blank requisitions for the student to complete.

3. Prepare simulations for students to file and retrieve results.

4. Assign students to work in a laboratory under the direction of the laboratory personnel.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Requisitions from completed testing
2. Procedures for filing and retrieving results from as many laboratories as possible

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit 2, Module B, 1981.

Barnett, Sara. MEDICAL LABORATORY ASSISTANT. The University of Texas, Austin, TX., pp. 3-4, 1981.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norvalk, CT., p. 167, 1984.

Williams, Catherine. MEDICAL LABORATORY SERVICES. The University of Texas, Austin, TX., pp. 6-7, 1981.

12.0 **COMPETENCY/SKILL:** Performs clerical duties required by the laboratory to ensure accurate and comprehensive records are maintained.

12.3 **TASK:** Maintains inventory of clerical and specimen collection supplies.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a list of twenty clerical and specimen collection supplies,

EVALUATION: student will compile a chart listing the frequency of inventory count, re-order point, re-order quantity and re-order procedure for each as used in the student's affiliate laboratory.

STANDARD: Maintenance of adequate supplies to do the work is the responsibility of all employees, and all must be aware of proper procedures in carrying out this responsibility.

STUDENT LEARNING EXPERIENCES:

1. Develop a list of clerical and specimen collection supplies.
2. Read inventory and receiving procedures from various laboratories, and discuss similarities and differences.
3. Discuss the student's role in maintaining inventory in the affiliate lab.
4. Organize the storage area for equipment, supplies, requests, etc.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Lead discussion on importance of adequate inventory maintenance.

2. Prepare simulations of the laboratory inventory storage area and assign students to demonstrate taking an inventory.

3. Assign students to work in a laboratory under the direction of the laboratory personnel.

4. Assign students to report on the procedures used in their affiliate laboratories for maintaining inventory of clerical and specimen collection supplies.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Laboratory inventory and receiving procedures for clerical and specimen collection supplies from as many institutions as possible
2. Inventory simulation setting

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT. The University of Texas, Austin, TX., p. 4, 1981.

Williams, Catherine. MEDICAL LABORATORY SERVICES. The University of Texas, Austin, TX., p. 7, 1981.

13.0 **COMPETENCY/SKILL:** Utilizes principles of work-relationships, supervision and management to maximize working conditions with health care team members.

13.1 **TASK:** Assumes accountability for personal work actions.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a real work situation in an affiliate laboratory or a simulation setting or case study,

EVALUATION: student will keep a log which documents situations in which accountability has been assumed for personal work actions.

STANDARD: In any employment situation, an employee demonstrates personal honesty and integrity by assuming responsibility for his/her own actions.

STUDENT LEARNING EXPERIENCES:

1. Discuss consequences to patients and co-workers of an employee who does not show accountability for personal work actions.

2. Analyze case study situations to identify the positive and negative actions. Discuss positive actions to replace the negative ones.

3. Write an essay describing an aspect of accountability which the student feels is particularly applicable to him/her.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Define "accountability".

2. Brainstorm actions for which workers, in general, are held accountable.

3. Assign students to brainstorm specific actions for which a laboratory worker is held accountable.

4. Assign students in small groups to make a list of areas and ways to demonstrate accountability.

5. Assign students to role play situations relating to accountability for work actions.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Role playing and case study situations regarding accountability for personal work actions
2. Form to develop a log for the evaluation activity

RESOURCES:

Badasch, Shirley. THE HEALTH CARE WORK. Brady Communications Co., Inc., Bovie, MD., pp. 9-10, 1985.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norvalk, CT., pp. 197-198, 1984.

Walters, Norma and others. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., p. 10, 1986.

13.0 **COMPETENCY/SKILL:** Utilizes principles of work-relationships, supervision and management to maximize working conditions with health care team members.

13.2 **TASK:** Recognizes lines of authority within the work setting.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given three case studies regarding lines of authority in the clinical laboratory,

EVALUATION: student will correctly analyze each.

STANDARD: Following lines of authority in handling situations in the work place is essential for the smooth and efficient delivery of correct and proper services to the consumer.

STUDENT LEARNING EXPERIENCES:

1. Review and discuss organizational charts from students' affiliate laboratories. Enter names of actual personnel in positions outlined on the chart.

2. Identify the line of authority on the organizational charts.

3. Analyze role-playing situations and identify the proper line of authority.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Review and discuss school organizational chart.

2. Assign students to bring in organizational charts from the student's affiliate laboratory. (If unavailable, student should develop one.)

3. Assign students to bring in illustrations/cartoons relating to authority and organization in the work setting.

4. Prepare role playing situations relating to organizational authority.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Copy of organizational chart for school from aide to school board
2. Case studies regarding lines of authority in the clinical laboratory

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit II, Module C, 1981.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., pp. 6-11, 1984.

13.0 **COMPETENCY/SKILL:** Utilizes principles of work-relationships, supervision and management to maximize working conditions with health care team members.

13.3 **TASK:** Refers problems to supervisor.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given list of twenty problems commonly encountered in clinical laboratory situations,

EVALUATION: student will correctly identify which problems she/he has the authority and knowledge to solve and which must be referred to supervisor.

STANDARD: Mastery is defined as 80% success.

STUDENT LEARNING EXPERIENCES:

1. Prepare a list of five questions on this subject before the start of instruction.

2. Practice problem analysis and classification. Answer questions developed before instruction began.

3. Analyze case studies involving problem analysis and classification and decision on referral or non-referral of problem to supervisor.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Explain method for analyzing a problem situation and determining its significance.

2. Lecture on limits of student's problem solving authority based on significance of problem.

3. Guest speaker from affiliate laboratory for lecture/ discussion on limits of problem solving authority in the clinical laboratory.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Guidelines for a method of problem analysis and classification
2. Case study situations involving problem analysis, classification and referral.

RESOURCES:

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., Unit II, Module C, 1981.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., p. 6, 1983.

14.0 **COMPETENCY/SKILL:** Uses biological specimens to perform routine analytical testing ordered by physician to aid in the diagnosis and treatment of patients.

14.2 **TASK:** Prepares reagents.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given equipment and supplies needed to prepare reagents,

EVALUATION: student will prepare a molar solution and a percent solution as assigned, showing all calculations used.

STANDARD: Correct preparation of solutions is essential in the clinical laboratory and evaluation activity must be completed without error.

STUDENT LEARNING EXPERIENCES:

1. Review/learn metric system and objectives of task 21.3.
2. Identify the proper glassware used to prepare percent and molar solutions.
3. Identify the type of water used to prepare reagents.
4. Demonstrate the ability to measure a given volume of liquid using graduated cylinders and volumetric flasks.
5. Practice the use of the balance and weights.
6. Calculate molar solutions and percent solutions.
7. Prepare a 10% saline solution and show calculations used to arrive at specific weights and volumes used.
8. Prepare a 1.0 Molar saline solution and show calculations used to arrive at specific weights and volumes used.
9. Practice labeling prepared reagents.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss glassware used to prepare reagents.
2. Discuss different types of solutions (percent, molar, etc.) and demonstrate calculations used.
3. Discuss metric system (weights and volumes).
4. Discuss proper procedures for use of a balance.
5. Discuss the use of water as a solvent.
6. Discuss proper labeling methods and procedures for prepared solutions.
7. Demonstrate weighing a given amount of sodium chloride.
8. Demonstrate measuring volumes using graduated cylinders and volumetric flasks.
9. Demonstrate calculation and preparation of molar and percent solutions.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Sodium Chloride
2. Two 100 ml bottles
3. Blank labels
4. Beaker
5. Balance and weigh boats or paper
6. 100 ml graduated cylinder
7. 100 ml volumetric flask

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT: STUDENT'S MANUAL (HO2018). University of Texas, Austin, TX., pp. 57-59, 1981.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 18-24; 43-47; 55-58; 403-404, 1986.

14.0 **COMPETENCY/SKILL:** Uses biological specimens to perform routine analytical testing ordered by physician to aid in the diagnosis and treatment of patients.

14.4 **TASK:** Operates designated automated instrumentation.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a designated automated instrument in the affiliate lab,

EVALUATION: student will demonstrate its operation.

STANDARD: "Operation" includes start-up procedures (including necessary assembly, washing, rinsing and blanking procedures), operation with patient specimens and control specimens as needed, and shut-down procedures (including necessary washing and/or rinsing and dismantling as needed). Calibration of the instrument should be done by qualified, certified laboratory personnel.

STUDENT LEARNING EXPERIENCES:

1. List automated instrumentation which the student may operate in his/her affiliate laboratory.

2. List principles concerning automated instrumentation.

3. Review safety precautions for working with specimens.

4. Practice operating designated automated instrumentation in the affiliate laboratory.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss principles concerning automated instrumentation.

2. Distribute and discuss copies of procedures for tests which require the use of instruments.

3. Guest speaker: Lecture/discussion of procedures which are followed for proper operation of each designated automated instrument.

4. Field trip to hospital laboratory for demonstration of operation of designated automated instrumentation.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Copies of procedures for tests which require the use of instruments which the students will operate from as many clinical laboratories as possible.

2. Specimens for use in practice.

RESOURCES:

AFFILIATE LABORATORY PROCEDURE MANUAL. Section on operation of each piece of designated instrumentation.

Barnett, Sara. MEDICAL LABORATORY ASSISTANT: STUDENT'S MANUAL (H02018). University of Texas, Austin, TX., pp. 59-60, 1981.

14.0 **COMPETENCY/SKILL:** Uses biological specimens to perform routine analytical testing ordered by physician to aid in diagnosis and treatment of patients.

14.6 **TASK:** Innoculates specimens for microbiological identification.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a urine specimen and a throat swab for culture,

EVALUATION: student will demonstrate procedure for innoculating specimens for culture.

STANDARD: Procedures can vary therefore standard is defined as the procedure used in the student's affiliate laboratory.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions.
2. Identify an innoculating loop used for urine cultures (calibrated).
3. Identify an innoculating loop used for throat cultures (standard).
4. Utilizing aseptic technique, practice innoculating a urine specimen onto growth media.
5. Utilizing aseptic technique, practice innoculating a throat swab onto growth media.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss safety aspects of handling culture specimens.

2. Discuss aseptic techniques.

3. Discuss the difference between calibrated and standard innoculating loops.

4. Discuss culture media.

5. Following a demonstration, have students innoculate Blood Agar and MacConkey culture media with throat swabs and urine specimens.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Calibrated urine and standard innoculating loops
2. Innoculation procedures from as many clinical laboratories as possible
3. Blood and MacConkey Agar plates, urine specimens and throat swabs for culture

RESOURCES:

AFFILIATE LABORATORY PROCEDURE MANUAL, Section on innoculation of microbiological specimens.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 346-368, 1986.

14.0 **COMPETENCY/SKILL:** Uses biological specimens to perform routine analytical testing ordered by physician to aid in the diagnosis and treatment of patients.

14.7 **TASK:** Prepares and stains smears.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given blood smears, slides and culture material, and stains,

EVALUATION: student will demonstrate procedure for preparing and staining bacteriological smears, and staining blood smears.

STANDARD: a. Blood smears must show staining which is uniform throughout. The stain should be alkaline enough to stain platelets, polychromatophilic cells, granules in the neutrophilic series, stippled cells and the nuclei of cells, and acid enough to bring out the contrast between the nuclei and the cytoplasm of neutrophils.

b. Gram stained smears must show a deep purple color on gram positive organisms and a bright pink on gram negative organisms. An excellent source of control materials are the standard ATCC staph and E. Coli cultures from the previous day's antibiotic sensitivity control plates.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions and the concepts of task 6.1.
2. Identify the stain used for blood smears.
3. Identify the stain used for bacteriological smears.
4. Practice the proper preparation of a blood smear. (See task 6.1)
5. Practice the proper staining of a blood smear.
6. Practice the proper preparation of a bacteriological smear.
7. Practice the proper staining of a of a bacteriological smear.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss the safety aspects of handling blood and bacteriological specimens.

2. Discuss the purpose and the importance of the blood smear and the importance of staining the blood smears.

3. Discuss specific stains used for each type of smear.

4. Following a demonstration, have students review preparation of a blood smear. (See task 6.1)

5. Following a demonstration, have students prepare a bacteriological smear.

6. Following a demonstration, have students stain a blood smear and gram stain a bacteriological smear.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Slides
2. Blood smears
3. Gram stain set
4. Wright or Giemsa stain
5. Gram positive and gram negative organisms in culture (can use standard sensitivity QC plates as source of organisms).

RESOURCES:

AFFILIATE LABORATORY PROCEDURE MANUAL. Section on staining blood smears and preparaion and staining of gram stains.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 128-134 and 339-345, 1986.

15.0 **COMPETENCY/SKILL:** Performs and montiors quality control of equipment, instrumentation, reagents and specimens to maintain accuracy and precision of laboratory results.

15.3 **TASK:** Record basic quality control data of equipment and instruments. (**NOTE:** For the purposes of this curriculum, the task is to "Record basic" rather than "Utilize" quality control data...)

PERFORMANCE OBJECTIVE:

CONDITIONS: Given two refrigerators and/or freezers somevhere in school, and thermometers and/or barometer,

EVALUATION: student will develop forms and record basic quality control data of each piece of equipment, and of the classroom itself. Teacher should be "notified" if any reading is outside limits set for acceptability.

STANDARD: Unbroken record must be kept daily for ten days unless student is not in school. "Quality control limits" must be listed on the form and the teacher must be notified if any parameter is outside the limits.

STUDENT LEARNING EXPERIENCES:

1. List equipment and instruments in the affiliate laboratory which require the recording of basic quality control data.

2. Discuss basic quality control data on various quality control record forms.

3. Learn parameters that are outside of control limits. (Hint: limits must be listed on the record form).

4. Notify supervisor if parameters are outside of control limits.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss quality control of instrumentation.

2. Distribute and discuss various maintenance record forms.

3. Discuss procedure to follow if recorded parameter is out of control limits.

4. Have students record basic preventative maintenance data (ie: temperature and/or barometric pressure) on various maintenance record forms in a simulation setting.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Simulation setting for recording of basic quality control data.
2. Quality control record forms from as many clinical laboratories as possible.

RESOURCES:

AFFLIATE LABORATORY PROCEDURE MANUAL. Section on basic quality control of instruments and equipment.

Barnett, Sara. MEDICAL LABORATORY ASSISTANT: STUDENT'S MANUAL (HO2018). The University of Texas, Austin, TX., pp. 60-65, 1981.

16.0 **COMPETENCY/SKILL:** Maintains inventory control of laboratory supplies for use in the performance of analytical tests to aid in the diagnosis and treatment of patients.

16.1 **TASK:** Receives and catalogs incoming supplies.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given hypothetical shipment and attendant papervork,

EVALUATION: student will demonstrate procedure for receiving and cataloging incoming supplies.

STANDARD: Procedure to be followed will be the procedure used at the affiliate laboratory.

STUDENT LEARNING EXPERIENCES:

1. List area(s) in the affiliate laboratory where supplies are received, cataloged and stored.

2. List procedures for receiving and cataloging incoming supplies.

3. Practice receiving and cataloging hypothetical incoming supplies, in a simulation setting or the affiliate lab.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss the importance of receiving and cataloging incoming supplies with review of safety precautions for receiving hazardous materials.

2. Distribute and discuss copies of "receiving" procedures from various clinical laboratories.

3. Define and show examples of shipping forms including invoices, packing lists, bills of lading, etc.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Copies of "receiving" procedures for the clinical laboratory from as many institutions as possible.
2. Simulation setting for receiving supplies.
3. Examples of shipping forms such as packing lists, invoices, bills of lading, etc.

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT: STUDENT'S MANUAL (H02018). The University of Texas, Austin, TX., p. 4, 1981.

16.0 **COMPETENCY/SKILL:** Maintains inventory control of laboratory supplies for use in the performance of analytical tests to aid in the diagnosis and treatment of patients.

16.2 **TASK:** Organizes storage areas for supplies and reagents.

PERFORMANCE OBJECTIVE:

CONDITIONS: Given a series of storage and caution symbols, and names and/or labels of regents,

EVALUATION: student will identify storage conditions of each.

STANDARD: Incorrect storage of supplies and reagents can be dangerous, costly and can jeopardize the outcome of testing.

STUDENT LEARNING EXPERIENCES:

1. Review safety precautions regarding storage of supplies and reagents.

2. List specific storage areas in the affiliate laboratory for various supplies and reagents.

3. List specific storage requirements for various classifications of chemicals and reagents.

4. Demonstrate the ability to match various storage requirements, chemicals and symbols.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss laboratory safety with regard to the storage of laboratory supplies and reagents.

2. Discuss the different storage areas and conditions.

3. Discuss specific storage requirements for various classifications of chemicals and reagents.

4. Discuss various storage and caution symbols used to identify various classifications of chemicals and reagents.

5. Guest lecturer from EPA or fire department and/or affiliate laboratory to talk about storage of hazardous chemicals and supplies.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. List of storage instructions and caution symbols from as many chemical companies as possible (ie: acids, bases, flammables, combustibles, poisons, volatiles, etc.)
2. Descriptions of various types of storage cabinets (ie: flammables cabinet, explosion proof refrigerator, etc.)

RESOURCES:

Barnett, Sara. MEDICAL LABORATORY ASSISTANT: STUDENT'S MANUAL (HO2018). The University of Texas, Austin, TX., p. 4, 1981.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 14-17, 1986.

Williams, Catherine. MEDICAL LABORATORY SERVICES: STUDENT'S MANUAL. University of Texas, Austin, TX., pp. 8-12, 1981.

21.0 **COMPETENCY/SKILL:** Utilizes basic mathematics and statistics to assist in analyzing and scrutinizing laboratory data.

21.3 **TASK:** Uses addition, subtraction, multiplication, division, ratio/proportion and percentages to determine reagents and solutions. (**NOTE:** For this curriculum, the task omits use of standards and dilutions.)

PERFORMANCE OBJECTIVE:

CONDITIONS: Given problems involving basic math computational skills and reagents and solutions,

EVALUATION: student will solve each.

STANDARD: Mastery is defined as 90% success.

STUDENT LEARNING EXPERIENCES:

1. Review basic math computation skills, percent and ratio/proportion.

2. Practice using basic mathematical skills using worksheets.

3. Solve problems involving reagents solutions.

SUGGESTED INSTRUCTIONAL TECHNIQUES:

1. Discuss basic math principles to include addition, subtraction, multiplication, division, ratio/proportions and percentages.

2. Discuss problems involving reagents and solutions.

3. Supervise guided practice with computation skills and reagent and solution problems.

4. Check results and provide student feedback after independent practice with computation skills and problems involving reagents and solutions.

INSTRUCTIONAL EQUIPMENT, MATERIALS AND SUPPLIES:

1. Division worksheets
2. Ratio/proporation worksheets
3. Percentage worksheets
4. Addition, subtraction and multiplication worksheets
5. Worksheet of problems involving preparation of solutions

RESOURCES:

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., pp. 57-58, 1986.

ANNOTATED BIBLIOGRAPHY

BOOKS

Badasch, Shirley. THE HEALTH CARE WORKER. Brady Publishers, Inc., Bovie, MD., 1985.

Beginner level general reference text dealing with work in the health field.

Barnett, Sara. MEDICAL LABORATORY ASSISTANT: Student's Manual (HO2018). University of Texas, Austin, TX., 1981.

A state approved curriculum for medical laboratory assistant training.

Bauer, John. CLINICAL LABORATORY METHODS, NINTH EDITION. C.V. Mosby Co. Publishers, St. Louis, MO., 1982.

An excellent general reference text at an intermediate level.

Brunner, Lillian and Doris Suddarth. LIPPINCOTT MANUAL OF NURSING PRACTICE. J. B. Lippincott Co., Philadelphia, PA., 4th Ed., 1986.

A nursing reference text for those skills which are common to careers in both nursing and the clincial laboratory.

Caldwell, Esther and Barbara Hegner. HEALTH CARE ASSISTANT. Delmar Publishers, Inc., Albany, N.Y., 1985.

This book is designed for the health care worker in many allied health areas.

FACILITY POLICY AND PROCEDURE MANUAL, Varied.

Manuals from the various affiliate clinical laboratories will outline procedures as they are done in the facility. These manuals are usually very detailed and informative.

FEDERAL AND STATE LABOR LAWS.

General information on duty restrictions for the high school student.

Ferris and Fong. MICROBIOLOGY FOR HEALTH CAREERS. Delmar Publishers, Inc., Albany, N.Y., 1982.

This book contains information about microorganisms and disease transmission, methods of disinfection, environmental control of microorganisms and hospital sanitation.

Garza, Diana and Kathleen Becan-McBride. PHLEBOTOMY HANDBOOK. Appleton Century-Crofts, Norwalk, CT., 1984.

Teaches skills needed for specimen procurement in the clinical laboratory.

HEALTH OCCUPATIONS PROGRAM (HOP) CURRICULUM. Arizona Department of Education, Phoenix, AZ., 1981.

State Vocational Education Curriculum in the general catagory of health occupations.

HEALTH SERVICES ASSISTANT (1E-13-1), University of Missouri, Instructional Materials Lab.

A state approved vocational curriculum for the health care worker.

Henry, John. CLINICAL DIAGNOSIS AND MANAGEMENT BY LABORATORY METHODS. W. B. Saunders, 17th Ed., 1984.

An excellent general reference text at the intermediate level.

Keir, Lucille, et.al. MEDICAL ASSISTING: CLINICAL ADMINISTRATIVE COMPETENCIES. Delmar Publishers, Inc., Albany, N.Y., 1986.

Good general reference text covering virtually every competency in this curriculum.

LAB OCCUPATIONS CLUSTER: MEDICAL LABORATORY ASSISTANT. Michigan State Curriculum.

This state approved vocational curriculum covers skills for the medical laboratory assistant.

Memmler, R. L. and D. L. Wood. THE HUMAN BODY IN HEALTH AND DISEASE. J.B. Lippincott Co., Philadelphia, PA., 1983.

This is a general anatomy and physiology text.

MINNESOTA STATE CURRICULUM. State Department of Education, Minneapolis, MN.

This state approved vocational curriculum covers competencies in the clinical laboratory area.

Nassif, Janet Zhun. HANDBOOK OF HEALTH CAREERS. Human Sciences Press, New York, N.Y., 1980.

This is an health career exploration guide.

OCCUPATIONAL SURVIVAL SKILLS. Oklahoma Department of Education.

This is a state approved vocational education curriculum assisting program that contains many activities and programmed studies in occupational skills. Many of the activities are appropriate for transfer to transparancies. The exercises are excellent in stimulating student discussion.

OKLAHOMA STATE CURRICULUM. Oklahoma Department of Education.

This is a state approved vocational education curriculum in health occupations.

Pendergraph, Garland E. HANDBOOK OF PHLEBOTOMY. Lea and Febiger, Philadelphia, PA., 1984.

This is a general phlebotomy text.

Schniedman, Rose and Susan Lambert. BEING A NURSING AIDE. Prentice-Hall, Inc., Englewood Cliffs, N.J., 4th Ed., 1985.

This is a general text on nursing assistant skills. It includes a section on personality and coping strategies as well as personal health, and communication.

Shea, Margaret A. and Sharron M. Zakers. FUNDAMENTALS OF MEDICAL ASSISTING. C.V. Mosby Co. Publishers, St. Louis, MO., 1984.

Good general text on medical assistant skills covering many of the competencies in this curriculum.

Simmers, Louise. DIVERSIFIED HEALTH OCCUPATIONS. Delmar Publishers, Inc., Albany, N.Y., 1983.

This book is written for allied health students and a student workbook is also available. It contains information on many of the competencies in the curriculum.

Slockblower, Jean M. and Thomas A. Blumenfeld. COLLECTION AND HANDLING OF LABORATORY SPECIMENS. J. B. Lippincott, Co., Philadelphia, PA., 1983.

This is an excellent reference for specimen procurement and handling, including labeling and shipping.

TABER'S CYCLOPEDIC MEDICAL DICTIONARY. F. A. Davis, Publishers, 1985.

An excellent and often used medical dictionary.

Walters, Norma J., et.al. BASIC MEDICAL LABORATORY TECHNIQUES. Delmar Publishers, Inc., Albany, N.Y., 1986.

A very good general text covering most of the competencies in this curriculum.

Williams, Catherine. MEDICAL LABORATORY SERVICES: STUDENT'S MANUAL. Center for Occupational Curriculum Development, Division of Continuing Education, University of Texas, Austin, TX., 1981.

This is a state approved vocational curriculum for careers in the clinical laboratory.

Wolff, LuVerne and Morlene Weitzel, Ruth Ann Zornow, Helen Zsohar. FUNDAMENTALS OF NURSING. J. B. Lippincott Co., Philadelphia, PA., 7th Ed., 1983.

A general nursing text for those skills which are common to careers in both nursing and the clinical laboratory.

AUDIO-VISUAL PROGRAMS

LIPPINCOTT AUDIOVISUAL PROGRAMS. J. B. Lippincott Co., Philadelphia, PA.

Computer programs, filmstrips and video are available in the health area.

"Body Against Self"; "Diseases and Immunity"; "Drawing Blood, Capillary and Venipuncture"; "Immune Response"; "Immunity"; "Introduction to Blood Drawing"; "Introduction to Specimen Collection"; "Isolation Procedures"; and "Medical Asepsis" (filmstrips)